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=> fil casreact
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FILE CONTENT:1840 - 9 Jul 2006 VOL 145 ISS 2

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*
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This file contains CAS Registry Numbers for easy and accurate substance identification.

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L1          STR
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NODE ATTRIBUTES:  
CONNECT IS E2 RC AT 7  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
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NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE  
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SEARCH TIME: 00.00.20

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L48 ANSWER 1 OF 2 CASREACT COPYRIGHT 2006 ACS on STN
AN 141:332212 CASREACT
TI Preparation of aminopyrimidinyl-substituted thiazoles useful as inhibitors
```

of protein kinases

IN Farmer, Luc J.; Harrington, Edmund Martin; Salituro, Francesco G.; Wang, Jian

PA Vertex Pharmaceuticals Incorporated, USA

SO PCT Int. Appl., 76 pp.

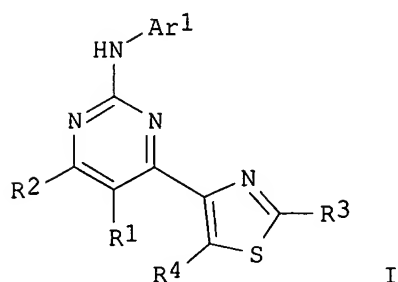
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

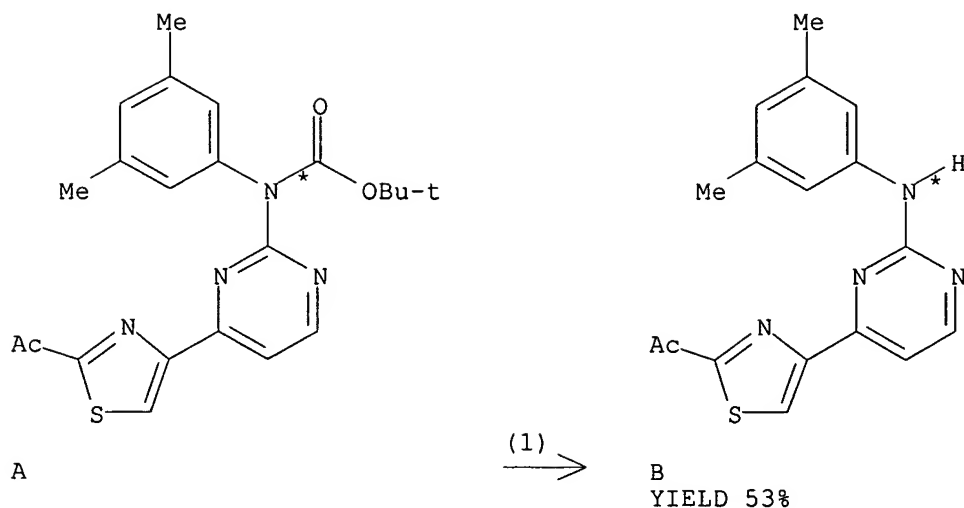
|      | PATENT NO.        | KIND   | DATE     | APPLICATION NO. | DATE     |
|------|-------------------|--|----------|-----------------|----------|
| PI   | WO 2004087698     | A2   | 20041014 | WO 2004-US9061  | 20040325 |
|      | WO 2004087698     | A3   | 20041209 |                 |          |
|      | W:                | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |          |                 |          |
|      | RW:               | BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |          |
|      | AU 2004225965     | A1   | 20041014 | AU 2004-225965  | 20040325 |
|      | CA 2523125        | AA   | 20041014 | CA 2004-2523125 | 20040325 |
|      | US 2004235834     | A1   | 20041125 | US 2004-809944  | 20040325 |
|      | EP 1610793        | A2   | 20060104 | EP 2004-758287  | 20040325 |
|      | R:                | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK   |          |                 |          |
| PRAI | US 2003-457218P   |  | 20030325 |                 |          |
|      | WO 2004-US9061    |  | 20040325 |                 |          |
| OS   | MARPAT 141:332212 |  |          |                 |          |
| GI   |                   |  |          |                 |          |



AB Title compds. I [R1-2 = halo, CN, NO2, etc.; Ar1 = aryl, etc.; R3-4 = ZR7; Z = bond, alkylidene; R7 = halo, NO2, CN, alkoxy, etc.] are prepared General procedures are provided, e.g., [4-[2-((3,5-dimethylphenyl)amino)pyrimidin-4-yl]thiazol-2-yl]methanol. Selected example compds. of the invention exhibit  $K_i < 5 \mu\text{M}$  for Syk kinase. I are useful for the treatment of autoimmune disorders.

RX(1) OF 113 ...A ==> B

jan delaval - 12 july 2006

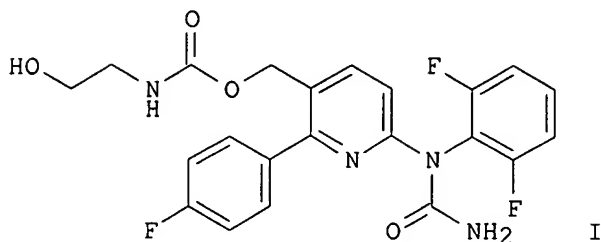


RX(1) RCT A **883967-53-1**  
 RGT C 76-05-1 F3CCO2H  
 PRO B **769933-80-4**  
 SOL 75-09-2 CH2Cl2  
 CON 1 hour, room temperature  
 NTE analogs similarly prepared

L48 ANSWER 2 OF 2 CASREACT COPYRIGHT 2006 ACS on STN  
 AN 141:225319 CASREACT  
 TI Process for preparation of N-heteroaryl-N-aryl-amines  
 IN Snoonian, John R.; Oliver-Shaffer, Patricia-Ann  
 PA Vertex Pharmaceuticals Incorporated, USA  
 SO PCT Int. Appl., 64 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

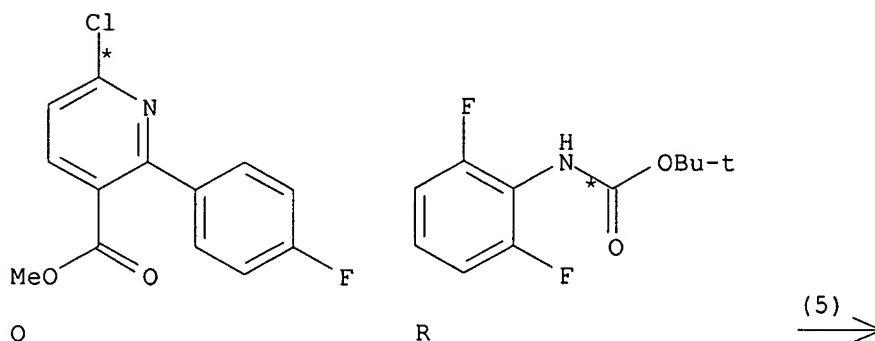
| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
|---|------|----------|------------------|----------|
| PI WO 2004072038  | A1   | 20040826 | WO 2004-US3933   | 20040210 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,<br>CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,<br>GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,<br>LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI<br>RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,<br>BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,<br>MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,<br>GQ, GW, ML, MR, NE, SN, TD, TG |      |          |                  |          |
| AU 2004212494   | A1   | 20040826 | AU 2004-212494   | 20040210 |
| CA 2515669  | AA   | 20040826 | CA 2004-2515669  | 20040210 |
| US 2004230058   | A1   | 20041118 | US 2004-775687   | 20040210 |
| EP 1603878  | A1   | 20051214 | EP 2004-709916   | 20040210 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,<br>IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  |      |          |                  |          |
| CN 1761653  | A    | 20060419 | CN 2004-80007137 | 20040210 |
| NO 2005004201   | A    | 20051006 | NO 2005-4201     | 20050909 |

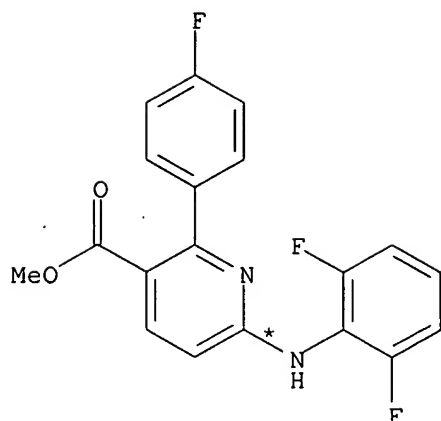
PRAI US 2003-446641P 20030210  
 US 2003-474272P 20030528  
 WO 2004-US3933 20040210  
 OS MARPAT 141:225319  
 GI



AB The present invention relates to a process for producing diarylamine derivs. with general formula of Ar1-NH-Ar2 [wherein Ar1 and Ar2 = independently (un)substituted aryl or heteroaryl] or salts thereof, which comprises coupling a compound of formula Ar1-X [where X = a leaving group] with an amine of formula Ar2-NH-Y [where Y = CO2Z; Z = alkyl, PhCH2, Fmoc, etc.] in the presence of an alkali metal salt or a transition metal catalyst. For example, the compound I was prepared starting from 6-chloro-2-(4-fluorophenyl)nicotinic acid Me ester (preparation given) and N-(tert-butoxycarbonyl)-2,6-difluoroaniline.

RX(5) OF 37      ...O + R ==> S...





S

RX(5)

STAGE(1)

RGT T 98327-87-8 Phosphine, [1,1'-binaphthalene]-2,2'-  
 diylbis[diphenyl-  
 CAT 3375-31-3 Pd(OAc)<sub>2</sub>  
 SOL 108-88-3 PhMe  
 CON SUBSTAGE(1) 2 hours, room temperature -> 50 deg C  
 SUBSTAGE(2) 50 deg C -> 30 deg C

STAGE(2)

RCT O 745833-06-1, R **745833-17-4**  
 RGT U 7778-53-2 K<sub>3</sub>PO<sub>4</sub>  
 CON SUBSTAGE(2) overnight, 100 deg C

STAGE(3)

RGT V 76-05-1 F<sub>3</sub>CCO<sub>2</sub>H  
 SOL 75-09-2 CH<sub>2</sub>Cl<sub>2</sub>  
 CON SUBSTAGE(2) overnight

PRO S **745833-08-3**

NTE workup

=&gt; d bib abs fhit retable tot 147

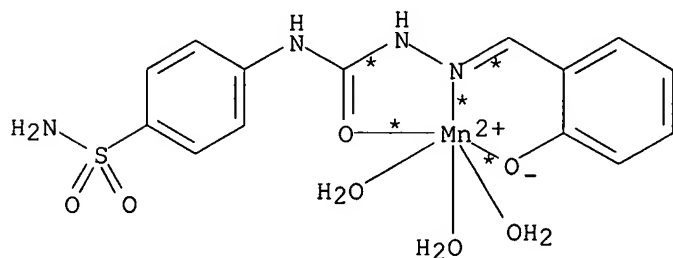
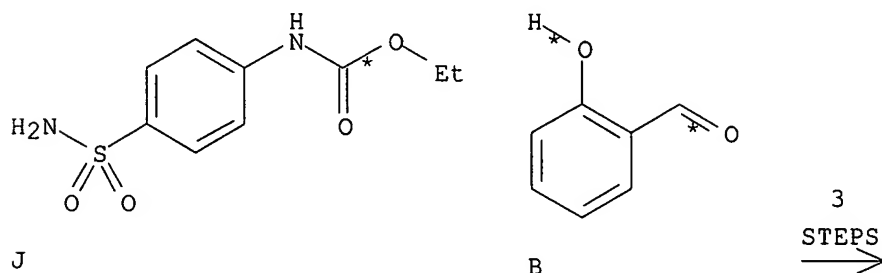
L47 ANSWER 1 OF 3 CASREACT COPYRIGHT 2006 ACS on STN  
 AN 139:331783 CASREACT  
 TI Synthesis, spectral and magnetic studies of mononuclear and binuclear  
 Mn(II), Co(II), Ni(II) and Cu(II) complexes with semicarbazone ligands  
 derived from sulfonamide  
 AU Saleh, A. A.; Khalil, S. M. E.; Eid, M. F.; El-Ghamry, M. A.  
 CS Department of Chemistry, Faculty of Education, Ain Shams University,  
 Cairo, Egypt  
 SO Journal of Coordination Chemistry (2003), 56(6), 467-480  
 CODEN: JCCMBQ; ISSN: 0095-8972  
 PB Taylor & Francis Ltd.  
 DT Journal

LA English

AB Mononuclear and binuclear Mn(II), Co(II), Ni(II) and Cu(II) complexes of new semicarbazone ligands derived from sulfonamide were synthesized and characterized by elemental anal. and IR spectra. In mononuclear complexes, the semicarbazone behaves as a monoanionic terdentate or neutral terdentate ligand towards the metal ion. However, in binuclear complexes, it behaves as a monoanionic terdentate towards one of the bivalent metal ions and monoanionic bidentate ligand towards the other metal ion in the same complex. Electronic spectra and magnetic susceptibility measurements of the solid complexes indicated octahedral geometry around Mn(II), Co(II) and Ni(II) and square planar around the Cu(II) ion. These geometries were confirmed by the results obtained from thermal analyses. The antifungal properties of the ligands and their complexes were studied.

RX(44) OF 79 COMPOSED OF RX(5), RX(1), RX(7)

RX(44) J + B ==&gt; N

● Cl<sup>-</sup>● 3 H<sub>2</sub>O

N

RX(5) RCT J 41104-55-6  
 RGT K 7803-57-8 N<sub>2</sub>H<sub>4</sub>-H<sub>2</sub>O  
 PRO A 87013-80-7

SOL 68-12-2 DMF  
 CON SUBSTAGE(1) room temperature  
 SUBSTAGE(2) 4 hours, reflux

RX(1) RCT A 87013-80-7, B 90-02-8  
 PRO C 613221-31-1  
 SOL 68-12-2 DMF  
 CON 1 hour, reflux  
 NTE product depends on time of refluxing

RX(7) RCT C 613221-31-1

STAGE(1)  
 RGT O 1310-65-2 LiOH  
 SOL 7732-18-5 Water, 64-17-5 EtOH  
 CON 30 minutes, room temperature

STAGE(2)  
 RGT P 7773-01-5 MnCl<sub>2</sub>  
 SOL 7732-18-5 Water  
 CON 5 hours, room temperature

PRO N 613221-35-5

# RETABLE

| Referenced Author<br>(RAU) | Year<br>(RPY) | VOL<br>(RVL) | PG<br>(RPG) | Referenced Work<br>(RWK) | Referenced<br>File |
|----------------------------|---------------|--------------|-------------|--------------------------|--------------------|
| Biradar, N                 | 1971          | 33           | 2451        | J Inorg Nucl Chem        | CAPLUS             |
| Cotton, F                  | 1961          | 83           | 4175        | J Am Chem Soc            |                    |
| Dhakarey, R                | 1985          | 32           | 35          | J Chin Chem Soc          | CAPLUS             |
| Eugenio, J                 | 1999          | 18           | 2483        | Polyhedron               | CAPLUS             |
| Hathaway, B                | 1970          | 5            | 143         | Coord Chem Rev           | CAPLUS             |
| Hueso, F                   | 1999          | 18           | 351         | polyhedron               |                    |
| Ismail, T                  | 2000          | 43           | 227         | Egypt J Chem             | CAPLUS             |
| Khalil, S                  | 2000          | 52           | 73          | J Coord Chem             | CAPLUS             |
| Kulkarni, Y                | 1990          | 67           | 46          | J Indian Chem Soc        | CAPLUS             |
| Lever, A                   | 1968          |              |             | Inorganic Electronic     |                    |
| Nakamoto, K                | 1980          |              | 258         | Infrared and Raman S     |                    |
| Probhakaran, C             | 1998          | 75           | 17          | J Indian Chem Soc        |                    |
| Saleh, A                   | 1990          | 29           | 2132        | J Inorg Chem             | CAPLUS             |
| Satapathy, S               | 1970          | 32           | 2223        | J Inorg Nucl Chem        | CAPLUS             |
| Satpathy, K                | 1986          | 68           | 377         | J Indian Chem Soc        |                    |
| Saxena, A                  | 1981          | 43           | 3091        | J Inorg Nucl Chem        | CAPLUS             |
| Singh, A                   | 1996          | 73           | 339         | J Indian Chem Soc        |                    |
| Sonar, G                   | 1995          | 72           | 677         | J Indian Chem Soc        |                    |
| West, D                    | 1993          | 49           | 123         | Coord Chem Rev           |                    |

L47 ANSWER 2 OF 3 CASREACT COPYRIGHT 2006 ACS on STN

AN 139:7095 CASREACT

TI Syntheses of guanidinoglycosides with the inventive use of Mitsunobu conditions and 1,8-diazabicyclo[5.4.0]undec-7-ene

AU Lin, Peishan; Heng, Sabrina Cher Hui; Sim, Mui Mui

CS Institute of Molecular and Cell Biology, Singapore, 117609, Singapore

SO Synthesis (2003), (2), 255-261

CODEN: SYNTBF; ISSN: 0039-7881

PB Georg Thieme Verlag

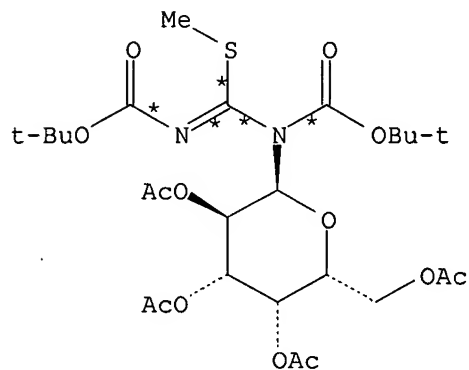
DT Journal

LA English

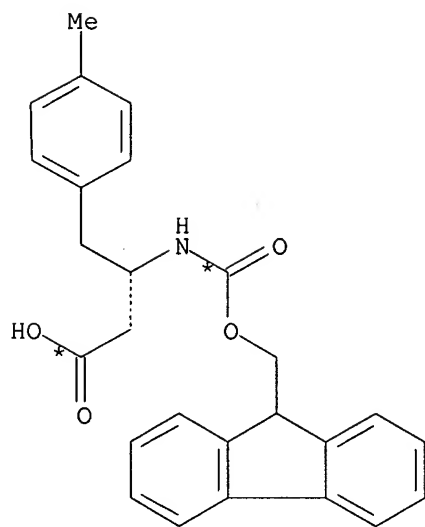
AB A series of novel guanidinoglycosides was successfully synthesized. This

was accomplished with the use of Mitsunobu conditions as a strategy to convert the glycopyranose anomeric hydroxy group to give the corresponding substituted masked guanidines in high yields. Subsequent deprotection and coupling with Fmoc protected  $\beta$ -amino acid, afforded a series of N,N'-substituted-methylisothioureas. Cleavage of Fmoc followed by concomitant cyclization was achieved with a catalytic amount of DBU to give the guanidinoglycosides.

RX(32) OF 41 COMPOSED OF RX(3), RX(11), RX(6)  
 RX(32) I + T ==> AA



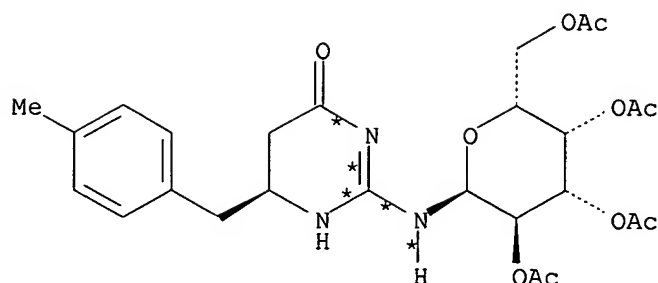
I



T

3  
 STEPS  
 →





AA  
YIELD 45%

RX(3) RCT I 535952-55-7

STAGE(1)

RGT L 76-05-1 F3CCO2H  
SOL 75-09-2 CH2Cl2, 100-66-3 PhOMe  
CON 15 minutes, 0 deg C

STAGE(2)

SOL 110-54-3 Hexane

STAGE(3)

SOL 67-56-1 MeOH

STAGE(4)

RGT M 144-55-8 NaHCO3  
CON neutralized

PRO K 535952-59-1

RX(11) RCT T 270062-97-0

STAGE(1)

RGT V 2592-95-2 1-Benzotriazolol, W 693-13-0 i-PrN:C:NPr-i  
SOL 127-19-5 AcNMe2, 75-09-2 CH2Cl2  
CON 10 minutes, room temperature

STAGE(2)

RCT K 535952-59-1  
RGT X 7087-68-5 EtN(Pr-i)2  
SOL 75-09-2 CH2Cl2  
CON 24 hours, room temperature

PRO Z 535952-62-6  
NTE stereoselective

RX(6) RCT Z 535952-62-6  
RGT AB 6674-22-2 DBU  
PRO AA 535952-67-1  
SOL 109-99-9 THF  
CON 1 hour, room temperature  
NTE stereoselective

RETABLE

| Referenced Author | Year | VOL | PG | Referenced Work | Referenced |
|-------------------|------|-----|----|-----------------|------------|
|-------------------|------|-----|----|-----------------|------------|

| (RAU)          | (RPY) | (RVL) | (RPG) | (RWK)                | File   |
|----------------|-------|-------|-------|----------------------|--------|
| Baker, T       | 2000  | 65    | 9054  | J Org Chem           | CAPLUS |
| Bu, X          | 2002  | 43    | 2419  | Tetrahedron Lett     | CAPLUS |
| Cotner, E      | 1998  | 63    | 1737  | J Org Chem           | CAPLUS |
| Delaware, D    | 1986  | 39    | 251   | J Antibiot           | CAPLUS |
| Dodd, D        | 1994  | 35    | 977   | Tetrahedron Lett     | CAPLUS |
| Dodd, D        | 1998  | 39    | 5701  | Tetrahedron Lett     | CAPLUS |
| Feichtinger, K | 1998  | 63    | 3804  | J Org Chem           | CAPLUS |
| Feichtinger, K | 1998  | 63    | 8432  | J Org Chem           | CAPLUS |
| Gololobov, Y   | 1981  | 37    | 437   | Tetrahedron          | CAPLUS |
| Hughes, D      | 1996  | 28    | 127   | Org Prep Proced Int  | CAPLUS |
| Kim, H         | 1999  | 2     | 193   | Synlett              |        |
| Lemieux, R     | 1948  | 3     | 337   | Adv Carbohydr Chem   | CAPLUS |
| Lin, P         | 2001  | 66    | 8243  | J Org Chem           | CAPLUS |
| Magri, N       | 1988  | 51    | 298   | J Nat Prod           | CAPLUS |
| Maurin, M      | 2001  | 45    | 2977  | Antimicrob Agents Ch | CAPLUS |
| Metcalf, C     | 1998  | 39    | 3435  | Tetrahedron Lett     | CAPLUS |
| Mitsunobu, O   | 1981  |       | 1     | Synthesis            | CAPLUS |
| Molina, P      | 1994  |       | 1197  | Synthesis            | CAPLUS |
| Mori, Y        | 1999  | 40    | 7239  | Tetrahedron Lett     | CAPLUS |
| Ouyang, X      | 1999  | 55    | 8295  | Tetrahedron          | CAPLUS |
| Reitz, A       | 1989  | 32    | 2110  | J Med Chem           | CAPLUS |
| Roush, W       | 1994  | 28    | 4935  | Tetrahedron Lett     |        |
| Sheppeck, J    | 2000  | 41    | 5329  | Tetrahedron Lett     | CAPLUS |
| Wade, J        | 1991  | 4     | 194   | Pept Res             | CAPLUS |

L47 ANSWER 3 OF 3 CASREACT COPYRIGHT 2006 ACS on STN

AN 138:361747 CASREACT

TI Synthesis and antimicrobial activity of copper-, cobalt- and nickel(II) complexes with Schiff bases

AU Jadegoud, Y.; Ijare, Omkar B.; Mallikarjuna, N. N.; Angadi, S. D.;  
Mruthyunjayaswamy, B. H. M.

CS Department of Chemistry, Gulbarga University, Gulbarga, 585 106, India

SO Journal of the Indian Chemical Society (2002), 79(12), 921-924

CODEN: JICSAH; ISSN: 0019-4522

PB Indian Chemical Society

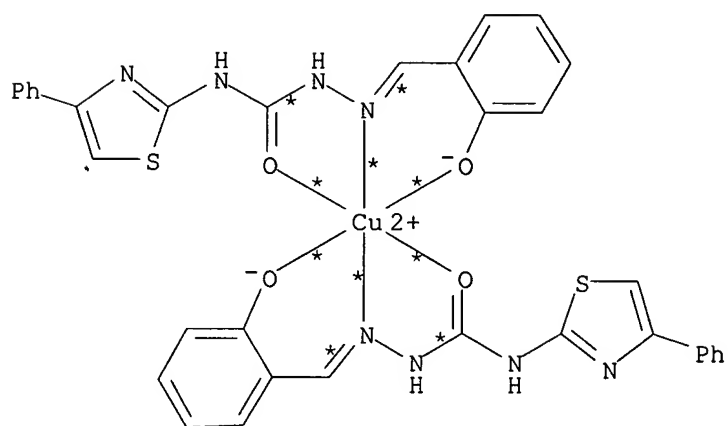
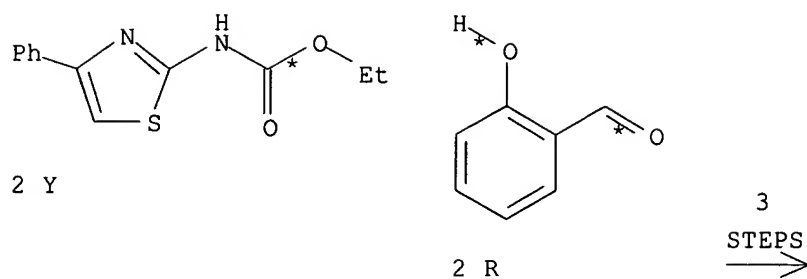
DT Journal

LA English

AB A few complexes of CuII, CoII and NiII were prepared by reacting their metal(II) chlorides with 3-(4'-phenylthiazole-2'-yl)-1-(2'-hydroxy-1'-iminomethylphenyl)urea and with 3-(4'-phenylthiazole-2'-yl)-1-(2',4'-dihydroxy/2'-hydroxy-5'-chloro-1'-methyliminomethylphenyl)ureas (Schiff bases) in EtOH medium. The chelates are colored solids and nonelectrolytes ML2. The IR spectra of the ligands and complexes suggest involvement of o-hydroxy group, carbonyl group, azomethine group in bonding through O and N atoms resp. The electronic spectra and magnetic data suggest the octahedral stereochem. for all the complexes in which metal(II) ion exhibits coordination number six. The ligands and complexes were tested for their antimicrobial activity.

RX(31) OF 48 COMPOSED OF RX(14), RX(10), RX(1)

RX(31) 2 Y + 2 R ==> B



B  
YIELD 88%

RX(14)    RCT   Y **3673-36-7**  
           RGT   AA 302-01-2 N2H4  
           PRO   S 519141-81-2  
           SOL   64-17-5 EtOH  
           CON   5 hours, reflux  
  
 RX(10)    RCT   R 90-02-8, S 519141-81-2  
           PRO   A 519141-78-7  
           CAT   7647-01-0 HCl  
           SOL   64-17-5 EtOH  
           CON   8 hours, reflux  
  
 RX(1)     RCT   A 519141-78-7  
  
           STAGE(1)  
               RGT   C 7447-39-4 CuCl2  
               SOL   64-17-5 EtOH  
               CON   2 hours, reflux  
  
           STAGE(2)  
               RGT   D 127-09-3 AcONa  
               CON   3 hours, reflux  
  
           PRO   B **519141-69-6**

## RETABLE

| Referenced Author<br>(RAU) | Year<br>(RPY) | VOL<br>(RVL) | PG<br>(RPG) | Referenced Work<br>(RWK) | Referenced<br>File |
|----------------------------|---------------|--------------|-------------|--------------------------|--------------------|
| Biradar, N                 | 1971          | 33           | 2451        | J Inorg Nucl Chem        | CAPLUS             |
| Chohan, Z                  | 1998          | 28           | 1673        | Synth React Inorg Me     | CAPLUS             |
| Deshpande, V               | 1986          |              | 2397        | Angew Makromol Sci C     |                    |
| Dey, K                     | 1999          | 38           | 1139        | Indian J Chem, Sect      |                    |
| Dilworth, I                | 1976          | 21           | 29          | Coord Chem Rev           |                    |
| Dodson, R                  | 1945          | 67           | 2242        | J Am Chem Soc            | CAPLUS             |
| Dunn, T                    | 1960          |              |             | The Visible and Ultr     |                    |
| Durig, J                   | 1967          | 23           | 1121        | Spectrochim Acta         | CAPLUS             |
| Dutta, R                   | 1985          | 44           | 635         | J Sci Ind Res            | CAPLUS             |
| Feggis, B                  | 1966          |              |             | Introduction to Liga     |                    |
| Freedman, H                | 1961          | 83           | 2900        | J Am Chem Soc            | CAPLUS             |
| Hiremath, A                | 1982          | 59           | 1017        | J Indian Chem Soc        |                    |
| Hiremath, A                | 1984          | 61           | 191         | J Indian Chem Soc        | CAPLUS             |
| Holm, R                    | 1966          | 7            | 83          | Prog Inorg Chem          | CAPLUS             |
| Ibrahim, K                 | 1993          | 32           | 361         | Indian J Chem, Sect      |                    |
| Kato, M                    | 1964          | 64           | 99          | Chem Rev                 | CAPLUS             |
| Krishna, C                 | 1977          | 39           | 1253        | J Inorg Nucl Chem        |                    |
| Mane, R                    | 1983          | 22           | 81          | Indian J Chem, Sect      |                    |
| Pelizzi, C                 | 1980          |              | 1970        | J Chem Soc, Dalton T     | CAPLUS             |
| Prabhakaran, C             | 1980          | 20           | 474         | Indian J Chem Sect A     |                    |
| Rajashekar, G              | 1998          | 10           | 306         | Asian J Chem             |                    |
| Rastogi, D                 | 1979          | 8            | 97          | J Coord Chem             |                    |
| Tahir, A                   | 2000          | 39           | 450         | Indian J Chem, Sect      |                    |
| Thaker, B                  | 1996          | 35           | 483         | Indian J Chem, Sect      |                    |
| Tijmir, H                  | 1983          | 2            | 723         | Polyhedron               |                    |

=> => fil reg

FILE 'REGISTRY' ENTERED AT 09:05:24 ON 12 JUL 2006

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STRUCTURE FILE UPDATES: 11 JUL 2006 HIGHEST RN 892124-43-5

DICTIONARY FILE UPDATES: 11 JUL 2006 HIGHEST RN 892124-43-5

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> d que 169

L49 69304 SEA FILE=HCAPLUS ABB=ON PLU=ON ALKALI METAL?/CT

L50 583318 SEA FILE=HCAPLUS ABB=ON PLU=ON "ALKALI METAL SALTS"+OLD,NT/CT

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L51      635713 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L49 OR L50)
L52      89263 SEA FILE=HCAPLUS ABB=ON  PLU=ON  TRANSITION METAL?/CT
L53      8286 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("TRANSITION METALS, USES"/CT
OR "TRANSITION METALS, USES AND MISCELLANEOUS"/CT)
L54      669385 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L51 OR L52 OR L53) AND
(PY<=2003 OR PRY<=2003 OR AY<=2003)
L55      14006 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L54 AND HET?/SC,SX
L56      155 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 AND ("COUPLING AGENTS"+OLD
,NT/CT OR "COUPLING FACTORS"/CT OR "COUPLING REACTION"+OLD,NT/C
T)
L57      76 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 AND "COUPLING REACTION
CATALYSTS"+OLD,NT/CT
L58      3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 AND ("COUPLING REACTION
ENTHALPY"+OLD,NT/CT OR "COUPLING REACTION KINETICS"+OLD,NT/CT
OR "COUPLING REACTIONS"/CT)
L59      175 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L56 OR L57 OR L58)
L60      120 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L59 AND HET?/SC
L62      TRANSFER PLU=ON  L60 1- RN : 4093 TERMS
L63      4093 SEA FILE=REGISTRY ABB=ON  PLU=ON  L62
L64      STR

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Cy $\sim$ N $\sim$ Hy  
1 2 3

## NODE ATTRIBUTES:

CONNECT IS E2 RC AT 2  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 3

## STEREO ATTRIBUTES: NONE

L69 616 SEA FILE=REGISTRY SUB=L63 SSS FUL L64

=> d que 174

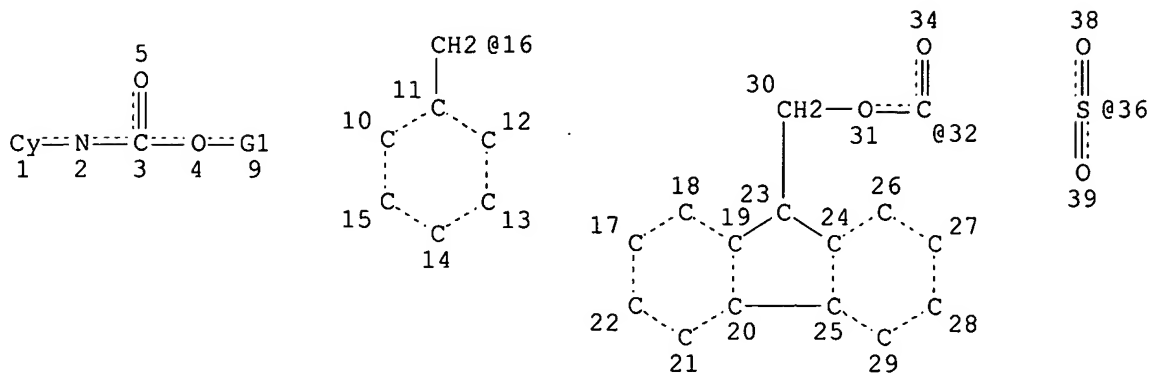
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L49      69304 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ALKALI METAL?/CT
L50      583318 SEA FILE=HCAPLUS ABB=ON  PLU=ON  "ALKALI METAL SALTS"+OLD,NT/CT

L51      635713 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L49 OR L50)
L52      89263 SEA FILE=HCAPLUS ABB=ON  PLU=ON  TRANSITION METAL?/CT
L53      8286 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ("TRANSITION METALS, USES"/CT
OR "TRANSITION METALS, USES AND MISCELLANEOUS"/CT)
L54      669385 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L51 OR L52 OR L53) AND
(PY<=2003 OR PRY<=2003 OR AY<=2003)
L55      14006 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L54 AND HET?/SC,SX
L56      155 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 AND ("COUPLING AGENTS"+OLD
,NT/CT OR "COUPLING FACTORS"/CT OR "COUPLING REACTION"+OLD,NT/C
T)
L57      76 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 AND "COUPLING REACTION
CATALYSTS"+OLD,NT/CT
L58      3 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L55 AND ("COUPLING REACTION
ENTHALPY"+OLD,NT/CT OR "COUPLING REACTION KINETICS"+OLD,NT/CT
OR "COUPLING REACTIONS"/CT)
L59      175 SEA FILE=HCAPLUS ABB=ON  PLU=ON  (L56 OR L57 OR L58)
L60      120 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L59 AND HET?/SC
L62      TRANSFER PLU=ON  L60 1- RN : 4093 TERMS

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L63 4093 SEA FILE=REGISTRY ABB=ON PLU=ON L62  
L66 STR



VAR G1=AK/16/32/36/CY  
NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 33

STEREO ATTRIBUTES: NONE  
L74 30 SEA FILE=REGISTRY SUB=L63 SSS FUL L66

=> d his

(FILE 'HOME' ENTERED AT 08:25:28 ON 12 JUL 2006)  
SET COST OFF

FILE 'CASREACT' ENTERED AT 08:25:48 ON 12 JUL 2006  
ACT ZINNA775B/A

L1 STR  
L2 140 SEA FILE=CASREACT SSS FUL L1 ( 1518 REACTIONS)  
ACT ZINNA775A/Q

L3 STR

L4 STR L3  
L5 3 S L4 SAM SUB=L2  
L6 139 S L4 FUL SUB=L2  
SAV L6 ZINNA775E/A  
L7 1 S L2 AND (SNOONIAN? OR OLIVER? OR SHAFFER?)/AU  
L8 1 S L6 AND (SNOONIAN? OR OLIVER? OR SHAFFER?)/AU  
L9 2 S L2,L6 AND VERTEX?/PA,CS  
L10 2 S L7-L9  
L11 106 S L2 AND (PY<=2003 OR PRY<=2003 OR AY<=2003)  
ACT ZINNA775C/A

L12 ( 4892)SEA FILE=CASREACT ABB=ON PLU=ON ("TRANSITION METAL ALLOYS"/CT  
L13 ( 17604)SEA FILE=CASREACT ABB=ON PLU=ON (ALKALI OR TRANSITION) (L)META  
L14 17604 SEA FILE=CASREACT ABB=ON PLU=ON (L12 OR L13)

L15 2358 S ALKALI METAL?/CT  
 L16 4892 S TRANSITION METAL?/CT  
 L17 3 S L11 AND L15,L16  
 L18 2 S L17 NOT L10  
 E COUPLING/CT  
 L19 2 S E4-E8 AND L11  
 L20 1 S L10 AND L17,L19  
 L21 2 S L10,L20  
 L22 3 S L17-L20 NOT L21  
 L23 101 S L11 NOT L21,L22

FILE 'HCAPLUS' ENTERED AT 08:35:42 ON 12 JUL 2006  
 ACT ZINNA775D/A

-----  
 L24 ( 1)SEA FILE=HCAPLUS ABB=ON PLU=ON US20040230058/PN OR US2004-775  
 L25 ( 16)SEA FILE=HCAPLUS ABB=ON PLU=ON ("SNOONIAN J R"/AU OR "SNOONIA  
 L26 ( 4)SEA FILE=HCAPLUS ABB=ON PLU=ON ("OLIVER SHAFFER PATRICA ANN"/  
 L27 ( 23)SEA FILE=HCAPLUS ABB=ON PLU=ON ("OLIVER P"/AU OR "OLIVER P A"  
 L28 ( 13)SEA FILE=HCAPLUS ABB=ON PLU=ON ("OLIVER PATRICIA"/AU OR "OLIV  
 L29 ( 24)SEA FILE=HCAPLUS ABB=ON PLU=ON ("SHAFFER P"/AU OR "SHAFFER P  
 L30 ( 2)SEA FILE=HCAPLUS ABB=ON PLU=ON "SHAFFER PATRICIA"/AU  
 L31 ( 683)SEA FILE=HCAPLUS ABB=ON PLU=ON VERTEX?/PA,CS  
 L32 759 SEA FILE=HCAPLUS ABB=ON PLU=ON (L24 OR L25 OR L26 OR L27 OR L  
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 L33 1 S L24 AND US20040230058/PN  
 SEL RN

FILE 'REGISTRY' ENTERED AT 08:36:31 ON 12 JUL 2006

L34 29 S E1-E29  
 L35 16 S L34 NOT NC5/ES  
 L36 14 S L35 NOT C6/ES

FILE 'HCAPLUS' ENTERED AT 08:38:28 ON 12 JUL 2006

FILE 'CASREACT' ENTERED AT 08:38:42 ON 12 JUL 2006

L37 159260 S L36  
 L38 2 S L37 AND L21  
 L39 1 S L37 AND L22  
 L40 2 S L22 NOT L39  
 L41 75 S L23 AND L37

FILE 'REGISTRY' ENTERED AT 08:41:20 ON 12 JUL 2006

L42 11 S L36 AND (PD OR RB OR CS OR K OR NA)/ELS  
 L43 3 S L36 NOT L42  
 L44 1 S L43 AND H5NO

FILE 'HCAPLUS' ENTERED AT 08:42:11 ON 12 JUL 2006

FILE 'CASREACT' ENTERED AT 08:42:24 ON 12 JUL 2006

L45 60 S L42,L44 AND L23  
 L46 5 S L21,L22 AND (PY<=2003 OR PRY<=2003 OR AY<=2003)  
 L47 3 S L46 NOT L21

FILE 'CASREACT' ENTERED AT 08:44:03 ON 12 JUL 2006

L48 2 S L46 NOT L47

FILE 'HCAPLUS' ENTERED AT 08:47:03 ON 12 JUL 2006

E ALKALI METAL/CT  
 E ALKALI METAL?/CT  
 L49 69304 S ALKALI METAL?/CT

```

      E ALKALI METAL/CT
      E ALKALI METAL SALT/CT
L50    583318 S E4+OLD,NT
L51    635713 S L49,L50
      E TRANSITION METAL/CT
L52    89263 S TRANSITION METAL?/CT
      E TRANSITION METALS, /CT
L53    8286 S E18,E19
L54    669385 S L51-L53 AND (PY<=2003 OR PRY<=2003 OR AY<=2003)
L55    14006 S L54 AND HET?/SC,SX
      E COUPLING/CT
L56    155 S L55 AND (E6+OLD,NT OR E14 OR E21+OLD,NT)
L57    76 S L55 AND E58+OLD,NT
L58    3 S L55 AND (E66+OLD,NT OR E67+OLD,NT OR E72)
L59    175 S L56-L58
L60    120 S L59 AND HET?/SC
L61    55 S L59 NOT L60

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FILE 'REGISTRY' ENTERED AT 08:56:48 ON 12 JUL 2006

FILE 'HCAPLUS' ENTERED AT 08:56:49 ON 12 JUL 2006

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L62    TRA L60 1- RN :      4093 TERMS

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FILE 'REGISTRY' ENTERED AT 08:56:54 ON 12 JUL 2006

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L63    4093 SEA L62
L64    STR
L65    34 S L64 SAM SUB=L63
L66    STR L4
L67    0 S L66 SAM SUB=L63
L68    50 S L66
L69    616 S L64 FUL SUB=L63
      SAV L69 ZINNA775F/A

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FILE 'HCAPLUS' ENTERED AT 08:59:19 ON 12 JUL 2006

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L70    9 S L69 (L) PREP+NT/RL
L71    5 S L70 AND L60
L72    3 S L70 AND L42,L44

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FILE 'REGISTRY' ENTERED AT 09:01:20 ON 12 JUL 2006

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L73    50 S L66 SAM
L74    30 S L66 FUL SUB=L63
      SAV L74 ZINNA775G/A

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FILE 'HCAPLUS' ENTERED AT 09:02:01 ON 12 JUL 2006

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L75    2 S L74 AND L70
L76    3 S L72,L75
L77    2 S L71 NOT L76
L78    1 S L70 AND VERTEX?/PA,CS
L79    1 S L70 AND (SNOONIAN? OR OLIVER/ OR SHAFFER?)/AU
L80    1 S L78,L79
L81    5 S L76-L80
L82    5 S L81 AND L32,L33,L49-L61,L70-L72,L75-L81
L83    4 S L70 NOT L82

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FILE 'REGISTRY' ENTERED AT 09:05:24 ON 12 JUL 2006

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 09:05:40 ON 12 JUL 2006

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FILE COVERS 1907 - 12 Jul 2006 VOL 145 ISS 3  
FILE LAST UPDATED: 11 Jul 2006 (20060711/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d 182 bib abs hitrn fhitstr retable

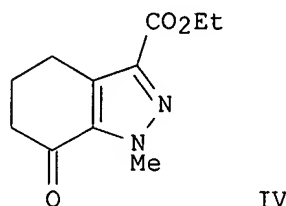
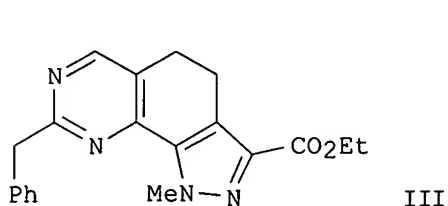
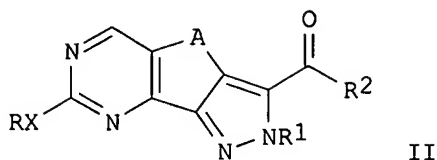
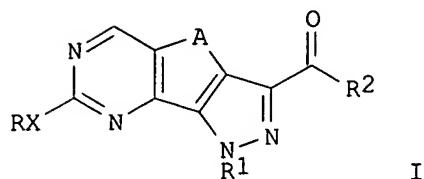
L82 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:1037107 HCAPLUS  
DN 142:23304  
TI Preparation of pyrazoloquinazolines as inhibitors of protein kinases such as Aurora2 for the treatment of proliferative disorders such as cancer, Alzheimer's disease, and autoimmune diseases  
IN Traquandi, Gabriella; Brasca, Maria Gabriella; D'Alessio, Roberto; Polucci, Paolo; Roletto, Fulvia; Vulpetti, Anna; Pevarello, Paolo; Panzeri, Achille; Quartieri, Francesca; Ferguson, Ron; Vianello, Paola; Fancelli, Daniele  
PA Pharmacia Italia S.A., Italy  
SO PCT Int. Appl., 226 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

|      | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE         |
|------|---|------|----------|-----------------|--------------|
| PI   | WO 2004104007   | A1   | 20041202 | WO 2004-EP50612 | 20040427 <-- |
|      | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |      |          |                 |              |
|      | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  |      |          |                 |              |
|      | AU 2004240772   | A1   | 20041202 | AU 2004-240772  | 20040427 <-- |
|      | CA 2526578  | AA   | 20041202 | CA 2004-2526578 | 20040427 <-- |
|      | EP 1636236  | A1   | 20060322 | EP 2004-741483  | 20040427 <-- |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK   |      |          |                 |              |
|      | NO 2005005496   | A    | 20060214 | NO 2005-5496    | 20051121 <-- |
| PRAI | US 2003-472661P   | P    | 20030522 | <--             |              |

jan delaval - 12 july 2006

WO 2004-EP50612  
OS MARPAT 142:23304  
GI

W 20040427



AB Pyrazoloquinazolines I or II [A = CH<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>, CH<sub>2</sub>CMe<sub>2</sub>, CMe<sub>2</sub>CH<sub>2</sub>, CH:CH; R = H, (un)substituted amino, alkyl, cycloalkyl, aryl, aralkyl, heterocyclyl, heterocyclylalkyl; R<sub>1</sub> = H, (un)substituted alkyl, cycloalkyl, aryl, aralkyl, heterocyclyl, heterocyclylalkyl; R<sub>2</sub> = (un)substituted amino, (hydroxy)amino; R<sub>1</sub>R<sub>2</sub> = (CH<sub>2</sub>)<sub>2</sub>NH, (CH<sub>2</sub>)<sub>3</sub>NH; R<sub>3</sub> = H, (un)substituted alkyl, cycloalkyl, aryl, aralkyl, heterocyclyl, heterocycloalkyl; RNR<sub>3</sub> may also form a 5- or 6-membered heterocycle which may also contain a second heteroatom of N, O, or S; X = NR<sub>3</sub>, C(:O)NR<sub>3</sub>, NHC(:O)NH, O, S, SO<sub>2</sub>] such as pyrazolo[4,3-h]quinazoline III are prepared as inhibitors of protein kinases such as Aurora2 (and particularly cell cycle-dependent kinases) for the treatment of proliferative disorders such as cancer, Alzheimer's disease, viral infection, autoimmune diseases, and neurodegenerative disorders. Acid-catalyzed vinyl ether formation from 1,2-cyclohexanedione provides 2-ethoxy-2-cyclohexen-1-one; Claisen condensation with di-Et oxalate and cyclocondensation with Me hydrazine yields oxotetrahydroindazolecarboxylate IV. Dimethylaminomethylenation of IV with DMF di-tert-Bu acetal, cyclocondensation with methylisothiourea sulfate, and substitution of the methylthio group with benzylzinc bromide in the presence of tetrakis(triphenylphosphine)palladium yields III. I are active as protein kinase inhibitors and therefore as inhibitors of cellular proliferation (no data). Detailed processes for the preparation of compds. I (and intermediates prepared within) are claimed.

IT 802534-91-4P 802534-99-2P 802535-27-9P  
802535-57-5P 802535-81-5P 802535-83-7P  
802537-13-9P 802537-15-1P 802537-24-2P  
802537-25-3P 802537-26-4P 802537-27-5P  
802537-28-6P 802537-29-7P 802537-30-0P  
802537-31-1P 802537-32-2P 802537-33-3P  
802537-34-4P 802537-35-5P 802537-36-6P  
802537-37-7P 802537-38-8P 802537-39-9P  
802537-92-4P 802537-93-5P 802537-94-6P  
802537-96-8P 802537-98-0P 802538-79-0P  
802539-63-5P 802539-65-7P 802539-70-4P  
802539-81-7P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic

preparation); THU (Therapeutic use); BIOL (Biological study);  
PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(drug candidate; preparation of pyrazoloquinazolines as inhibitors of  
protein kinases such as Aurora2 for the treatment of proliferative  
disorders such as cancer, Alzheimer's disease, and autoimmune diseases)

IT 802533-98-8P 802533-99-9P 802534-06-1P  
802534-07-2P 802534-23-2P 802534-25-4P  
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802536-45-4P 802536-46-5P 802536-47-6P  
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RL: PAC (Pharmacological activity); SPN (Synthetic preparation);  
THU (Therapeutic use); BIOL (Biological study); PREP (Preparation)  
; USES (Uses)

(drug candidate; preparation of pyrazoloquinazolines as inhibitors of  
protein kinases such as Aurora2 for the treatment of proliferative  
disorders such as cancer, Alzheimer's disease, and autoimmune diseases)

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RL: PAC (Pharmacological activity); SPN (Synthetic preparation);

THU (Therapeutic use); BIOL (Biological study); PREP (Preparation)

; USES (Uses)

(drug candidate; preparation of pyrazoloquinazolines as inhibitors of protein kinases such as Aurora2 for the treatment of proliferative disorders such as cancer, Alzheimer's disease, and autoimmune diseases)

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RL: PAC (Pharmacological activity); SPN (Synthetic preparation);  
 THU (Therapeutic use); BIOL (Biological study); PREP (Preparation)  
 ; USES (Uses)

(drug candidate; preparation of pyrazoloquinazolines as inhibitors of  
 protein kinases such as Aurora2 for the treatment of proliferative  
 disorders such as cancer, Alzheimer's disease, and autoimmune diseases)

IT 802541-68-0P 802541-69-1P 802541-70-4P  
 802541-71-5P 802541-85-1P 802541-86-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)

(intermediate; preparation of pyrazoloquinazolines as inhibitors of protein  
 kinases such as Aurora2 for the treatment of proliferative disorders  
 such as cancer, Alzheimer's disease, and autoimmune diseases)

IT 7440-05-3, Palladium, uses

RL: CAT (Catalyst use); USES (Uses)

(processes for the preparation of pyrazoloquinazoline protein kinase  
 inhibitors)

IT 534-17-8, Cesium carbonate 1336-21-6, Ammonium hydroxide  
 1907-33-1 4039-32-1, Lithium bis(trimethylsilyl)amide

RL: RGT (Reagent); RACT (Reactant or reagent)

(processes for the preparation of pyrazoloquinazoline protein kinase  
 inhibitors)

IT 802534-91-4P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation);  
 PREP (Preparation); THU (Therapeutic use); PREP  
 (Preparation); PREP (Preparation); RACT (Reactant or  
 reagent); USES (Uses)

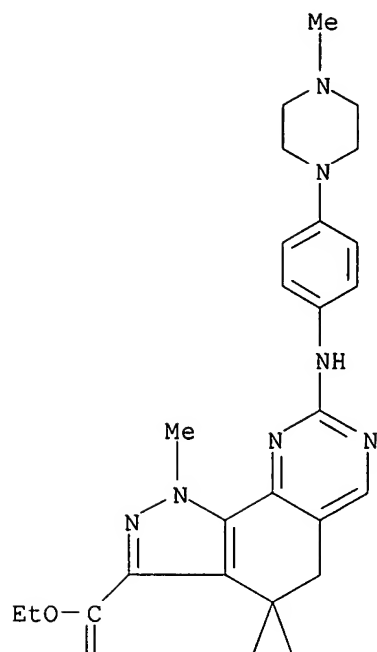
(drug candidate; preparation of pyrazoloquinazolines as inhibitors of  
 protein kinases such as Aurora2 for the treatment of proliferative  
 disorders such as cancer, Alzheimer's disease, and autoimmune diseases)

RN 802534-91-4 HCAPLUS

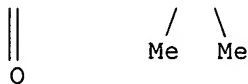
CN 1H-Pyrazolo[4,3-h]quinazoline-3-carboxylic acid, 4,5-dihydro-1,4,4-  
 trimethyl-8-[[4-(4-methyl-1-piperazinyl)phenyl]amino]-, ethyl ester (9CI)

(CA INDEX NAME)

PAGE 1-A



PAGE 2-A



## RETABLE

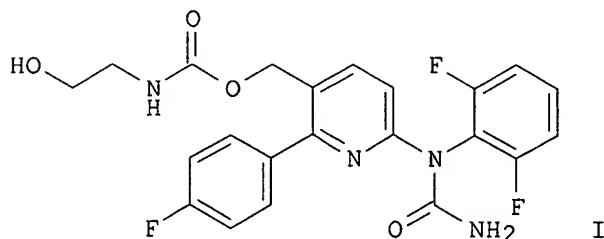
| Referenced Author<br>(RAU) | Year<br>(RPY) | VOL<br>(RVL) | PG<br>(RPG) | Referenced Work<br>(RWK) | Referenced<br>File |
|----------------------------|---------------|--------------|-------------|--------------------------|--------------------|
| Clare, M                   | 2003          |              |             | WO 03070706 A            | HCAPLUS            |
| Goldberg, D                | 2002          |              |             | US 2002119975 A1         | HCAPLUS            |
| Masferrer, J               | 2004          |              |             | WO 2004014352 A          | HCAPLUS            |

=&gt; d 182 bib abs hitstr retable 2-5

L82 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:696351 HCAPLUS  
 DN 141:225319  
 TI Process for preparation of N-heteroaryl-N-aryl-amines  
 IN Snoonian, John R.; Oliver-Shaffer, Patricia-Ann  
 PA Vertex Pharmaceuticals Incorporated, USA  
 SO PCT Int. Appl., 64 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English

FAN.CNT 1

|      | PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE         |
|------|---|------|----------|------------------|--------------|
| PI   | WO 2004072038   | A1   | 20040826 | WO 2004-US3933   | 20040210 <-- |
|      | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,<br>CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,<br>GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,<br>LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI<br>RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE,<br>BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,<br>MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN,<br>GQ, GW, ML, MR, NE, SN, TD, TG |      |          |                  |              |
|      | AU 2004212494   | A1   | 20040826 | AU 2004-212494   | 20040210 <-- |
|      | CA 2515669  | AA   | 20040826 | CA 2004-2515669  | 20040210 <-- |
|      | US 2004230058   | A1   | 20041118 | US 2004-775687   | 20040210 <-- |
|      | EP 1603878  | A1   | 20051214 | EP 2004-709916   | 20040210 <-- |
|      | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,<br>IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK  |      |          |                  |              |
|      | CN 1761653  | A    | 20060419 | CN 2004-80007137 | 20040210 <-- |
|      | NO 2005004201   | A    | 20051006 | NO 2005-4201     | 20050909 <-- |
| PRAI | US 2003-446641P   | P    | 20030210 | <--              |              |
|      | US 2003-474272P   | P    | 20030528 | <--              |              |
|      | WO 2004-US3933  | A    | 20040210 |                  |              |
| OS   | CASREACT 141:225319; MARPAT 141:225319  |      |          |                  |              |
| GI   |   |      |          |                  |              |



AB The present invention relates to a process for producing diarylamine derivs. with general formula of Ar1-NH-Ar2 [wherein Ar1 and Ar2 = independently (un)substituted aryl or heteroaryl] or salts thereof, which comprises coupling a compound of formula Ar1-X [where X = a leaving group] with an amine of formula Ar2-NH-Y [where Y = CO2Z; Z = alkyl, PhCH2, Fmoc, etc.] in the presence of an alkali metal salt or a transition metal catalyst. For example, the compound I was prepared starting from 6-chloro-2-(4-fluorophenyl)nicotinic acid Me ester (preparation given) and N-(tert-butoxycarbonyl)-2,6-difluoroaniline.

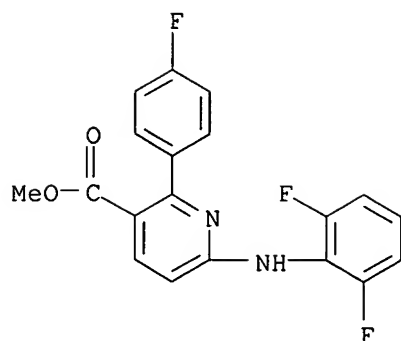
IT 745833-08-3P 745833-21-0P

RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; preparation of N-heteroaryl-N-aryl-amines)

RN 745833-08-3 HCAPLUS

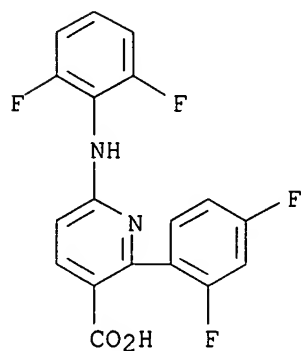
CN 3-Pyridinecarboxylic acid, 6-[(2,6-difluorophenyl)amino]-2-(4-fluorophenyl)-, methyl ester (9CI) (CA INDEX NAME)





RN 745833-21-0 HCAPLUS

CN 3-Pyridinecarboxylic acid, 2-(2,4-difluorophenyl)-6-[(2,6-difluorophenyl)amino]- (9CI) (CA INDEX NAME)



IT 7440-05-3, Palladium, uses

RL: CAT (Catalyst use); USES (Uses)  
(preparation of N-heteroaryl-N-aryl-amines)

RN 7440-05-3 HCAPLUS

CN Palladium (8CI, 9CI) (CA INDEX NAME)

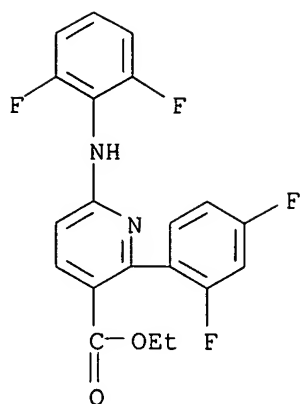
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IT 745833-15-2P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
(preparation of N-heteroaryl-N-aryl-amines)

RN 745833-15-2 HCAPLUS

CN 3-Pyridinecarboxylic acid, 2-(2,4-difluorophenyl)-6-[(2,6-difluorophenyl)amino]-, ethyl ester, monohydrochloride (9CI) (CA INDEX NAME)

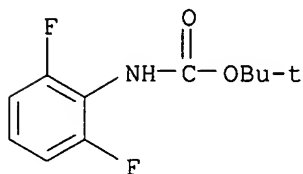


● HCl

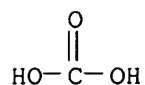
IT 1336-21-6, Ammonium hydroxide 745833-17-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of N-heteroaryl-N-aryl-amines)  
 RN 1336-21-6 HCAPLUS  
 CN Ammonium hydroxide ((NH<sub>4</sub>)(OH)) (9CI) (CA INDEX NAME)

H<sub>4</sub>N-OH

RN 745833-17-4 HCAPLUS  
 CN Carbamic acid, (2,6-difluorophenyl)-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



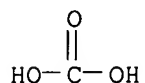
IT 497-19-8, Sodium carbonate, reactions 534-17-8, Cesium carbonate 584-08-7, Potassium carbonate 865-47-4 865-48-5 1310-73-2, Sodium hydroxide, reactions 7440-09-7D, Potassium, salts 7440-17-7D, Rubidium, salts 7440-46-2D, Cesium, salts 7778-53-2, Potassium phosphate  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (preparation of N-heteroaryl-N-aryl-amines)  
 RN 497-19-8 HCAPLUS  
 CN Carbonic acid disodium salt (8CI, 9CI) (CA INDEX NAME)



●2 Na

RN 534-17-8 HCAPLUS

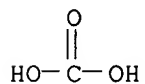
CN Carbonic acid, dicesium salt (8CI, 9CI) (CA INDEX NAME)



●2 Cs

RN 584-08-7 HCAPLUS

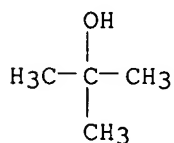
CN Carbonic acid, dipotassium salt (8CI, 9CI) (CA INDEX NAME)



●2 K

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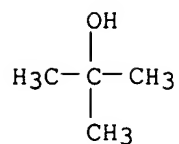
CN 2-Propanol, 2-methyl-, potassium salt (9CI) (CA INDEX NAME)



● K

RN 865-48-5 HCAPLUS

CN 2-Propanol, 2-methyl-, sodium salt (9CI) (CA INDEX NAME)



● Na

RN 1310-73-2 HCAPLUS  
CN Sodium hydroxide (Na(OH)) (9CI) (CA INDEX NAME)

Na-OH

RN 7440-09-7 HCAPLUS  
CN Potassium (8CI, 9CI) (CA INDEX NAME)

K

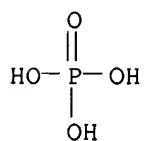
RN 7440-17-7 HCAPLUS  
CN Rubidium (8CI, 9CI) (CA INDEX NAME)

Rb

RN 7440-46-2 HCAPLUS  
CN Cesium (8CI, 9CI) (CA INDEX NAME)

Cs

RN 7778-53-2 HCAPLUS  
CN Phosphoric acid, tripotassium salt (8CI, 9CI) (CA INDEX NAME)

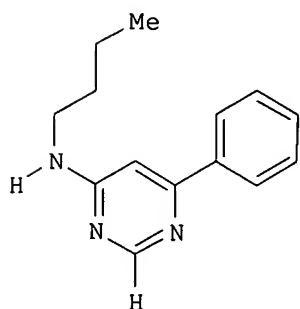


● 3 K

L82 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:98255 HCAPLUS  
DN 138:287627  
TI Suzuki Cross-Coupling of Solid-Supported Chloropyrimidines with

## Arylboronic Acids

AU Wade, Janice V.; Krueger, Clinton A.  
 CS ChemRx Division, Discovery Partners International Inc., South San Francisco, CA, 94080, USA  
 SO Journal of Combinatorial Chemistry (2003), 5(3), 267-272  
 CODEN: JCCHFF; ISSN: 1520-4766  
 PB American Chemical Society  
 DT Journal  
 LA English  
 OS CASREACT 138:287627  
 GI



AB The utility of the Suzuki cross-coupling to synthesize biaryl compds. is expanded herein to include reactions of resin-supported chloropyrimidines with boronic acids. In particular, an efficient method is described for the synthesis of a library of biaryl compds. from solid-supported chloropyrimidines. The Suzuki reaction was performed in an inert atmospheric using Pd2(dba)3/P(t-Bu)3 as catalyst, spray-dried KF as base, and THF as solvent. The reaction was allowed to proceed overnight at 50 °C. Upon cleavage with acid, a library of 4-(substituted amino)-6-arylpymidines, e.g. I, was obtained in moderate yield and high purity.

IT 503610-74-ODP, resin-supported 503610-79-5DP,

resin-supported

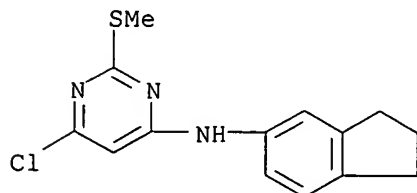
RL: RCT (Reactant); SPN (Synthetic preparation); PREP

(Preparation); RACT (Reactant or reagent)

(Suzuki cross-coupling of solid-supported chloropyrimidines with arylboronic acids)

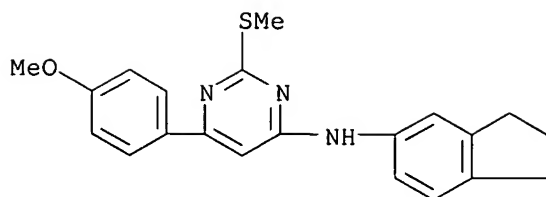
RN 503610-74-0 HCAPLUS

CN 4-Pyrimidinamine, 6-chloro-N-(2,3-dihydro-1H-inden-5-yl)-2-(methylthio)- (9CI) (CA INDEX NAME)

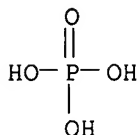


RN 503610-79-5 HCAPLUS

CN 4-Pyrimidinamine, N-(2,3-dihydro-1H-inden-5-yl)-6-(4-methoxyphenyl)-2-(methylthio)- (9CI) (CA INDEX NAME)

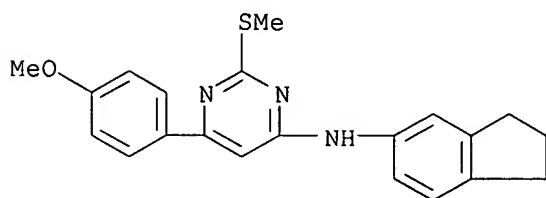


IT 7778-53-2, Tripotassium phosphate  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (Suzuki cross-coupling of solid-supported chloropyrimidines with  
 arylboronic acids)  
 RN 7778-53-2 HCAPLUS  
 CN Phosphoric acid, tripotassium salt (8CI, 9CI) (CA INDEX NAME)

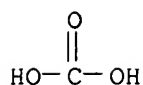


● 3 K

IT 503610-79-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (Suzuki cross-coupling of solid-supported chloropyrimidines with  
 arylboronic acids)  
 RN 503610-79-5 HCAPLUS  
 CN 4-Pyrimidinamine, N-(2,3-dihydro-1H-inden-5-yl)-6-(4-methoxyphenyl)-2-  
 (methylthio)- (9CI) (CA INDEX NAME)



IT 497-19-8, Sodium carbonate, reactions  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (failed reagent in the Suzuki cross-coupling of solid-supported  
 chloropyrimidines with arylboronic acids)  
 RN 497-19-8 HCAPLUS  
 CN Carbonic acid disodium salt (8CI, 9CI) (CA INDEX NAME)



●2 Na

## RETABLE

| Referenced Author<br>(RAU) | Year<br>(RPY) | VOL<br>(RVL) | PG<br>(RPG) | Referenced Work<br>(RWK) | Referenced<br>File |
|----------------------------|---------------|--------------|-------------|--------------------------|--------------------|
| Albericio, F               | 1990          | 55           | 3730        | J Org Chem               | HCAPLUS            |
| Boojamra, C                | 1997          | 62           | 1240        | J Org Chem               | HCAPLUS            |
| Breitenbucher, J           | 2001          | 3            | 528         | J Comb Chem              | HCAPLUS            |
| Breitenbucher, J           | 1998          | 39           | 1295        | Tetrahedron Lett         | HCAPLUS            |
| Chang, Y                   | 1999          | 6            | 361         | Chem Biol                | HCAPLUS            |
| Ding, S                    | 2002          | 124          | 1594        | J Am Chem Soc            | HCAPLUS            |
| Ding, S                    | 2001          | 42           | 8751        | Tetrahedron Lett         | HCAPLUS            |
| Fantauzzi, P               | 2000          |              |             | Abstr Pap Am Chem So     |                    |
| Franzen, R                 | 2000          | 78           | 957         | Can J Chem               | HCAPLUS            |
| Frenette, R                | 1994          | 35           | 9177        | Tetrahedron Lett         | HCAPLUS            |
| Gronowitz, S               | 1986          | 26           | 305         | Chem Scr                 | HCAPLUS            |
| Hassan, J                  | 2002          | 102          | 1359        | Chem Rev                 | HCAPLUS            |
| Jin, J                     | 2001          | 3            | 97          | J Comb Chem              | HCAPLUS            |
| Johnson, C                 | 1998          | 54           | 4097        | Tetrahedron              | HCAPLUS            |
| Littke, A                  | 1998          | 37           | 3387        | Angew Chem, Int Ed E     |                    |
| Littke, A                  | 2000          | 122          | 4020        | J Am Chem Soc            | HCAPLUS            |
| Miyaura, N                 | 1998          | 6            | 187         | Adv Met Org Chem         | HCAPLUS            |
| Parrish, C                 | 2001          | 66           | 3820        | J Org Chem               | HCAPLUS            |
| Pourbaix, C                | 2001          | 3            | 803         | Org Lett                 | HCAPLUS            |
| Wade, J                    | 2001          |              |             | Abstr Pap Am Chem So     |                    |
| Wolfe, J                   | 1999          | 121          | 9550        | J Am Chem Soc            | HCAPLUS            |
| Zhang, C                   | 1999          | 64           | 3804        | J Org Chem               | HCAPLUS            |
| Zhang, C                   | 1999          | 64           | 3804        | J Org Chem               | HCAPLUS            |
| Zhang, T                   | 1999          | 40           | 5813        | Tetrahedron Lett         | HCAPLUS            |

L82 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1993:625947 HCAPLUS

DN 119:225947

TI Method of synthesis of 1-(2',4',6'-trichlorophenyl)-3-[[2''-chloro-5''-(octadecylsuccinimido)phenyl]amino]-4-(1'''-naphthylazo)pyrazol-5-one by diazo coupling with  $\alpha$ -naphthylamine

IN Stepanov, Petr A.; Yurchenko, Galina A.; Khlypenko, Lyubov N.; Stepanova, Galina S.; Zhurin, Robert B.; Dyuzheva, Inna I.

PA Altajskij gni pi khimiko-fotograficheskoy promyshlennosti, USSR

SO U.S.S.R.

From: Izobreteniya 1992, (19), 104.

CODEN: URXXAF

DT Patent

LA Russian

FAN.CNT 1

| PATENT NO.           | KIND | DATE     | APPLICATION NO. | DATE         |
|----------------------|------|----------|-----------------|--------------|
| PI SU 1735296        | A1   | 19920523 | SU 1990-4821968 | 19900219 <-- |
| PRAI SU 1990-4821968 |      | 19900219 | <--             |              |
| GI                   |      |          |                 |              |

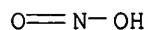
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title compound (I) is prepared by reaction of  $\alpha$ -naphthylamine with  $\text{NaNO}_2$  in presence of concentrated  $\text{HCl}$  at 0 to  $-2^\circ$ ; the resultant  $\alpha$ -naphthyl diazonium chloride is then coupled with pyrazole derivative II in alc. medium in presence of pyridine at  $0-35^\circ$ , in mass ratio  $\alpha$ -naphthylamine:II:pyridine = 0.25:1:(1.07-1.60). 2-Propanol is used as solvent. The process is conducted at  $15-25^\circ$ .

IT **7632-00-0**, Sodium nitrite  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (diazo coupling reagent, for naphthylamine with  
 (trichlorophenyl)[[chloro(octadecylsuccinimido)phenyl]amino]pyrazolone)

RN 7632-00-0 HCAPLUS

CN Nitrous acid, sodium salt (8CI, 9CI) (CA INDEX NAME)

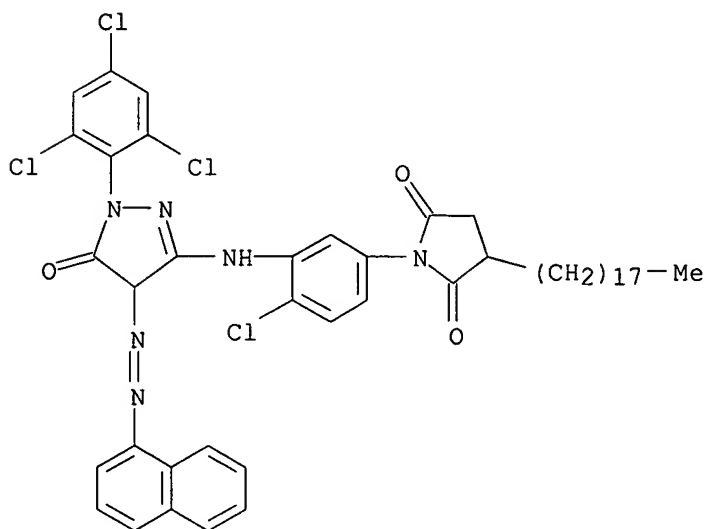


● Na

IT **70207-91-9P**  
 RL: **SPN (Synthetic preparation); PREP (Preparation)**  
 (preparation of)

RN 70207-91-9 HCAPLUS

CN 2,5-Pyrrolidinedione, 1-[4-chloro-3-[[4,5-dihydro-4-(1-naphthalenylazo)-5-oxo-1-(2,4,6-trichlorophenyl)-1H-pyrazol-3-yl]amino]phenyl]-3-octadecyl- (9CI) (CA INDEX NAME)

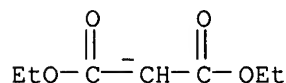


L82 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1982:423561 HCAPLUS  
 DN 97:23561

jan delaval - 12 july 2006

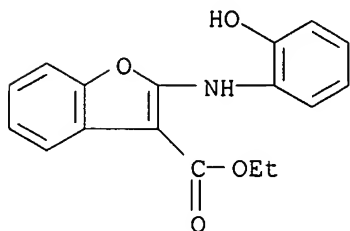


TI Synthesis of benzofuran-2-one derivatives by copper(I)-promoted coupling reactions of o-bromophenol with active methylene compounds  
 AU Setsune, Junichiro; Matsukawa, Kimihiro; Kitao, Teiji  
 CS Dep. Appl. Chem., Univ. Osaka Prefect., Osaka, 591, Japan  
 SO Tetrahedron Letters (1982), 23(6), 663-6  
 CODEN: TELEAY; ISSN: 0040-4039  
 DT Journal  
 LA English  
 OS CASREACT 97:23561  
 AB o-BrC<sub>6</sub>H<sub>4</sub>ONa with NaCHRCO<sub>2</sub>Et (R = CO<sub>2</sub>Et, COMe, CN) in the presence of CuBr in dioxane at 70 or 80° under N<sub>2</sub> for 5 h gave 93% 3-ethoxycarbonylbenzofuran-2-one, 15% 2-hydroxy-3-acetylbenzofuran, and 34% 2-o-hydroxyanilino-3-ethoxycarbonylbenzofuran, resp.  
 IT 996-82-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (coupling reaction of, with sodium bromophenoxide, benzofuran derivative by cuprous bromide-catalyzed)  
 RN 996-82-7 HCAPLUS  
 CN Propanedioic acid, diethyl ester, ion(1-), sodium (9CI) (CA INDEX NAME)



● Na<sup>+</sup>

IT 82131-02-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, by cuprous bromide-catalyzed coupling reaction of bromophenoxide with active methylene compound)  
 RN 82131-02-0 HCAPLUS  
 CN 3-Benzofurancarboxylic acid, 2-[(2-hydroxyphenyl)amino]-, ethyl ester (9CI) (CA INDEX NAME)



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